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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/686,292

10/14/2003

Thomas K. Bohley

0695 US

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7590

02/10/2005

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EXAMINER

GRANT, ROBERT J

ART UNIT

PAPER NUMBER

2838

DATE MAILED: 02/10/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary**Application No.**

10/686,292

Applicant(s)

BOHLEY, THOMAS K.

Examiner

Robert Grant

Art Unit

2838

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 14 October 2003.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-10 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-10 is/are rejected.
- 7) ☒ Claim(s) 9 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 10-14-03 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date 10-14-03
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____

DETAILED ACTION

Specification

1. Claim 9 is objected to because of the following informalities: The word 'claim' appears twice, one of them should be removed. Appropriate correction is required.
2. The disclosure is objected to because of the following informalities: On page 4, line 2, reference number 43 appears which appears to be a misspelling of 34. If this is not the case, then element 43 must be added to the drawings.

Appropriate correction is required.

Claim Rejections - 35 USC § 102

3. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 1-10 are rejected under 35 U.S.C. 102(b) as being anticipated by Mangez (US 5,648,713).

As to Claim 1, Mangez discloses a circuit for balancing cell voltages in a multiple-cell battery, comprising: means for comparing voltage at a junction of a first cell and a second cell (Column 2, lines 39-41) with a reference voltage (column 2, lines 33-39) and generating a comparison signal in response to a difference between said junction

voltage and said reference voltage (Column 2 lines 58-65); and a first current generator (element 15) connected across said first cell (element 3) and a second current generator (element 16) connected across said second cell (element 4), said current generators being normally in an off state (Column 2, lines 41-45 and lines 58-60)(by design they are in a normal off state when the voltage between the batteries is balanced), wherein only one of said first and second current generators is turned on at a time in response to said comparison signal (Column 2, lines 58-60).

As to Claim 2, Mangez discloses a circuit in accordance with claim 1 wherein said reference voltage is provided by a voltage divider (Elements 10 and 11) connected across said first and second cells.

As to Claim 3, Mangez discloses a circuit in accordance with claim 1 wherein said comparison means comprises a differential amplifier (Element 9).

As to Claim 4, Mangez discloses a circuit in accordance with claim 1 wherein said first and second current generators each comprise a transistor (elements 15 and 16) and a resistor (elements 17 and 18) in series with a collector thereof, said transistor being responsive to said comparison signal applied to a base thereof to function as a switch (column 3, lines 9-14).

As to Claim 5, Mangez discloses a circuit in accordance with claim 4 wherein said transistors are opposite polarity (elements 15 and 16) so as to allow only one transistor to conduct, depending on the polarity of said comparison signal (Column 2, lines 41-45).

As to Claim 6, Mangez discloses a circuit for balancing cell voltages in a multiple-cell battery (Figure 1), comprising: a voltage divider (elements 10 and 11) coupled across a series-connection of a first cell and a second cell; a differential amplifier (element 9) having a first input coupled to a midpoint of said voltage divider (Column 2, lines 33-39), and a second input coupled to a junction of said first and second cells (Column 2, lines 39-41), said differential amplifier generating a comparison signal upon detection of an unbalanced condition of said first and second cells (column 2, lines 58-65); and first (element 15) and second (element 16) current generators coupled respectively across said first (element 3) and second (element 4) cells, said first and second current generators each having a control element coupled to the output of said differential amplifier (Column 2, lines 41-45), wherein one of said first and second current generators is turned on responsive to said comparison signal (Column 2, lines 58-60).

As to Claim 7, Mangez discloses a circuit in accordance with claim 6 wherein said first and second current generators include first and second transistors (element 15 and 15).

As to Claim 8, Mangez discloses a circuit in accordance with claim 7 wherein said first and second transistors each have a base, a collector, and an emitter, wherein the bases of said first and second transistors are coupled together to an output of said differential amplifier (column 2, lines 41-45), said collectors are connected to respective current-setting resistors (elements 17 and 18), and said emitters of said first and second transistors are coupled together to said junction of said first and second cells (seen in figure 1).

As to Claim 9, Mangez discloses a circuit in accordance with claim 7 wherein said first and second transistors are opposite polarity (elements 15 and 16).

As to Claim 10, Mangez discloses a circuit in accordance with claim 6 wherein said differential amplifier may be enabled only during a battery charge cycle (Column 3, lines 25-28).

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Robert Grant whose telephone number is 571-272-2727. The examiner can normally be reached on M-F 8:30-5.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Michael Sherry can be reached on 571-272-2084. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

RG

A handwritten signature in black ink, followed by the date "2/4/05" written vertically.

MICHAEL SHERRY
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 2800